

Title (en)

Control device for electric rolling stock

Title (de)

Steuervorrichtung für elektrisches Rollmaterial

Title (fr)

Dispositif de commande pour matériel roulant électrique

Publication

EP 2636557 A3 20181212 (EN)

Application

EP 13156158 A 20130221

Priority

JP 2012051134 A 20120308

Abstract (en)

[origin: EP2636557A2] In order to minimize a calculation load and surely obtain a maximum adhesion torque, estimated adhesion torques are always stored, an maximum value is obtained from the stored plural estimated adhesion torques immediately before slip/ skid is detected when detecting the slip/ skid, and the maximum value is set as a maximum adhesion torque. The maximum adhesion torque immediately before the slip/ skid is detected is compared with a value of the estimated adhesion torque when the slip/ skid is detected. When the calculated value exceeds a threshold value, it is determined as a condition where an adhesion coefficient drastically drops, and a suppression/return ratio of the torque is switched to a lower value than that under a condition where the adhesion coefficient does not drastically drop. The value of the torque at the time of suppression or return is set to a smaller value to surely suppress the slip/ skid.

IPC 8 full level

B60L 3/10 (2006.01); **B60L 15/20** (2006.01); **B60T 8/17** (2006.01); **B61C 15/12** (2006.01)

CPC (source: EP US)

B60L 3/106 (2013.01 - EP US); **B60L 15/20** (2013.01 - EP US); **B60T 8/1705** (2013.01 - EP US); **B61C 15/12** (2013.01 - US); **B60L 2200/26** (2013.01 - EP US); **B60L 2240/423** (2013.01 - EP US); **B60L 2240/465** (2013.01 - EP US); **B60T 2210/124** (2013.01 - EP US); **B60T 2270/208** (2013.01 - EP US); **Y02T 10/64** (2013.01 - EP US); **Y02T 10/72** (2013.01 - EP US)

Citation (search report)

- [XY] EP 2161157 A1 20100310 - MITSUBISHI ELECTRIC CORP [JP]
- [Y] JP 2006136175 A 20060525 - NISSAN MOTOR
- [A] JP S6295906 A 19870502 - HITACHI LTD
- [A] US 2010009808 A1 20100114 - OHTSU NOBUYUKI [JP]

Cited by

CN103978912A; EA034951B1; CN117341489A; WO2021225461A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2636557 A2 20130911; **EP 2636557 A3 20181212**; CN 103303158 A 20130918; CN 103303158 B 20150819; JP 2013188009 A 20130919; JP 5779526 B2 20150916; US 2013238176 A1 20130912; US 8825240 B2 20140902

DOCDB simple family (application)

EP 13156158 A 20130221; CN 201310038630 A 20130131; JP 2012051134 A 20120308; US 201313775297 A 20130225